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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/042,973	01/09/2002	Arthur Devon Mitchell	BLD920010016US1	6668
23550	7590	01/12/2005	EXAMINER	
HOFFMAN WARNICK & D'ALESSANDRO, LLC			LE, DIEU MINH T	
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ALBANY, NY 12207			PAPER NUMBER	

2114

DATE MAILED: 01/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/042,973	Applicant(s) MITCHELL, ARTHUR DEVON	
	Examiner Dieu-Minh Le	Art Unit 2114	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 October 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

1. This Office Action is in response to the amendment filed on October 04, 2004 in application 10/042,973.

2. Claims 1-18 again presented for examination; claim 19 has been added.

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

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5. Claims 1-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Terrell et al. (US PGPUB 2003/0210686 A1 hereafter referred to as Terrell) in view of Huang (US PGPUB 2003/0117950 A1).

As per claim 1:

Terrell explicitly teaches:

- A network router [fig. 1, item 102] having an internal automatic backup [col. 6, par. 0070] comprising:
 - a primary port facility [fig. 1, col. 6, par. 0067];
 - a card array (i.e. network adapter on a single integrated circuit) [fig. 1, item 105] having at least one backup router card [fig. 1, item 104 or members 113-117];
- a switch fabric [fig. 2, item 211 and 213, col. 25, par. 0202], wherein the switched fabric automatic replaces a failed router card connected to the primary port facility with a backup router card from the card array (i.e. network adapter on a single integrated circuit) [fig. 1, col. 6, par. 0066 and 0070].

Terrell does not explicitly teach:

- **unutilized** backup router card.

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However, Terrell does disclose capability of:

- An improved networks having routers that perform routing functions and to methods for routing network traffic [abstract, fig. 1, col. 1, par. 0002] comprising:
 - a connectivity among routers, application program, display, other computing communication devices, etc... [fig. 1-3, col. 5, par. 0064];
 - **network redundancy, multiple or expanded network ports** [col. 6, par. 0070].
- *routing circuits having ring input/output ports used to support backup and redundancy within routing network* [col. 26, par. 0211].

In addition, Huang explicitly teaches:

- A routing communication network having nodal mesh connect topology [abstract, fig. 1, col. 1, par. 0001];
comprising:
 - backup routing and switching path [col. 2, par. 0016 and 0017].
 - **activate the backup connection (i.e., unutilized backup routing function) in supporting the routing network communication** [col. 5, par. 0048].

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Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention was made to first realizing Terrell's **network redundancy, multiple or expanded network ports, and routing circuits having ring input/output ports used to support backup and redundancy within routing network as being the unutilized** backup router card as claimed by Applicant. This is because Terrell explicitly deal with the routing communication failure detection and correction within the plurality of routing nodal connectivity. Therefore, routing backup and redundancy functions including both logical and physical devices and connectivity are obviously a must in providing a through failure prediction, analysis, and replacement in ensuring the system operation correctly; second, by applying the **activate the backup connection (i.e., unutilized backup routing function) in supporting the routing network communication** as taught by Huang in conjunction with the improved networks having routers that perform routing functions and to methods for routing network traffic as disclosed by Terrell, the routing networking system can enhance its operation performance, more specifically to ensuring the failure be monitored, detected, prioritized, and replaced in proper and efficient manner. One of ordinary skill in the art would have been motivated to do so to improve the routing communication

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system operation availability and network/system performance throughput therein.

As per claims 2-3:

Terrell further explicitly teaches:

- the primary port facility comprises a primary processor and secondary processor [fig. 24, processor 2402 and 2404];
- a primary port facility has serial connection ports for connection to router card [fig. 1, col. 26, par. 0205].

As per claim 4:

Terrell further explicitly teaches:

- an information system for receiving a failure message (i.e., error reports) [fig. 6, item 602] from the primary port facility [fig. 1 and 2, col. 29, par. 0229 and col. 38, par. 0281 and 0285];
- a switching system (i.e., redirected message) for physically replacing the failure router card with the backup router card in response to the failure message [fig. 1 and 2, col. 25, par. 0202 and col. 38 par. 0285];
- ***abort a routing transaction and remove a routing connection in supporting the routing fail-over capability [col. 16, table 14].***

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In addition, Huang explicitly teaches:

- A routing communication network having nodal mesh connect topology [abstract, fig. 1, col. 1, par. 0001];

comprising:

- a switching system for physically replacing [i.e., manual switch] the failed router card with the backup router card in response to the failure message [col. 5-6 , par. 0054].

As per claims 5 and 6:

Terrell further explicitly teaches:

- the information system includes a bus for communicating routing information between the primary port facility and the card array [fig. 1 and 2, col. 26, par. 0205]
- the switching system [col. 25, par. 0202] includes a replacement mechanism for physically replacing the failed router card with the backup router card [fig. 1 and 2, col. 6, par. 0066 and 0070].
- *abort a routing transaction and remove a routing connection in supporting the routing fail-over capability [col. 16, table 14].*

In addition, Huang explicitly teaches:

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- A routing communication network having nodal mesh connect topology [abstract, fig. 1, col. 1, par. 0001];
comprising:

- a switching system for physically replacing [i.e., manual switch] the failed router card with the backup router card in response to the failure message [col. 5-6 , par. 0054].

As per claim 7:

Terrell further explicitly teaches:

- the failed router card is physically moved into an expanded bay(i.e., expanded network device, redundancy due to failure) by the switch fabric [fig. 2, item 211 and 213, col. 25, par. 0202].

As per claims 8-13:

These claims are similar to claims 1-7. The only minor different is that claim 8 include "the switched fabric includes an information system for receiving a failure message from the primary port facility and a switching system for replacing the failed router card with the backup router card" limitation; however, this limitation is illustrated in dependent claim 4 of independent claim 1. Therefore, these claims are also rejected under the same rationale applied against claims 1-7. In

addition, all of the limitations have been noted in the rejection as per claims 1-7.

As per claims 14-18:

These claims are similar to claims 1-7. The only minor different is that claim 14 include "a primary port facility having a primary processor and a secondary process" limitation and "the switched fabric includes an information system for receiving a failure message from the primary port facility and a switching system for replacing the failed router card with the backup router card" and limitation; however, these limitations are illustrated in dependent claims 2 and 4 of independent claim 1. Therefore, these claims are also rejected under the same rationale applied against claims 1-7. In addition, all of the limitations have been noted in the rejection as per claims 1-7.

As per claim 19:

Terrell further explicitly teaches:

- the replacement mechanism [col. 25, par. 0202] for physically disconnects the failed router card from the primary port facility, move the failed router card to an expanded bay, physically disconnects the unutilized backup router card from the card array, and connects the

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unutilized backup router card to the primary port facility from which the failed router card was moved [fig. 1 and 2, col. 6, par. 0066 and 0070; col. 16, table 14].

In addition, Huang explicitly teaches:

- a switching system for physically replacing [i.e., manual switch] the failed router card with the backup router card in response to the failure message [col. 5-6 , par. 0054].

6. Claims 1-19 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Sarkimen et al. (US PGPUB 2003/0101426 A1 hereafter referred to as Sarkimen) in view of Huang (US PGPUB 2003/0117950).

As per claim 1:

Sarkimen explicitly teaches:

- A network router [fig. 1, abstract, col. 1, par. 0002] having an internal automatic backup [col. 6, par. 0064] comprising:
 - a primary port facility (i.e., interface) [fig. 1, col. 5, par. 0057 and 0058];
 - a card array (i.e. single integrated circuit board) [col. 6, par. 0063];

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- a switch fabric [col. 2, par. 0012 and col. 5, par. 0053], wherein the switched fabric automatic replaces a failed router card [col. 6, par. 0064].

Sarkimen does not explicitly teach:

- **unutilized** backup router card.

However, Sarkimen does disclose capability of:

- load balancing, redundancy, and fail-over within the network routing and switching system [col. 2, par. 0012 and col. 5, par. 0058].

In addition, Huang explicitly teaches:

- A routing communication network having nodal mesh connect topology [abstract, fig. 1, col. 1, par. 0001];

comprising:

- backup routing and switching path [col. 2, par. 0016 and 0017];
- **activate the backup connection (i.e., unutilized backup routing function) in supporting the routing network communication** [col. 5, par. 0048].

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Therefore, it would have been obvious to a person having ordinary skill in the art at the time of Applicant's invention was made to applying the **activate the backup connection (i.e., unutilized backup routing function) in supporting the routing network communication** as taught by Huang in conjunction with Sarkimen's load balancing, redundancy, and fail-over within the network routing and switching system in ensuring the router's operation perform uninterruptedly. One of ordinary skill in the art would have been motivated to do so to improve the routing communication system operation availability and network/system performance throughput therein.

As per claims 2-3:

Sarkimen further explicitly teaches:

- the primary port facility comprises a primary processor and secondary processor [fig. 2, line card, ingress/egress processor and fabric processors].

Even though, Sarkimine does not disclose capability of:

- serial connection ports connectivity.

However, Sarkimen does clearly demonstrate the router connectivity among computing devices [fig. 1, items 100, 102,

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104, 112 and fig. 2]. These device are normally connected via serial interfaces such as X. 25, T1, etc... [col. 1, par. 0005].

Therefore, this would have been obvious to an ordinary skill in the art to realize that the serial interface is one of the most commonly protocol used within the routing networking environment.

As per claim 4:

Sarkimen further explicitly teaches:

- an information system for receiving a failure message (i.e., parity trailer used for error detection) [col. 7, par. 0072] from the primary port facility [fig. 1, col. 5, par. 0057 and 0058];
- a switching system [col. 2, par. 0012 and col. 5, par. 0053] for physically replacing the failed router card [col. 2, par. 0012 and col. 5, par. 0058].

Sarkimen does not explicitly teach:

- backup router card.

However, Sarkimen does disclose capability of:

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- load balancing, redundancy, and fail-over within the network routing and switching system [col. 5, par. 0058].

Therefore, it would have been obvious to an ordinary skill in the art to realize that the Sarkimen's isolating network routing and switching system would have included such backup router card feature in order to providing the network fail-over, load balance, and redundancy capability therein. This is further obvious because the Sarkimen explicitly illustrates the capability of re-directing traffic flow from device to other device in order to achieving the network un-interrupting routing and switching operation [col. 5, par. 0058].

As per claims 5 and 6:

Sarkimen further explicitly teaches:

- the information system includes a bus for communicating routing information between the primary port facility and the card array [fig. 1-5, col. 13, par. 0117]
- the switching system [col. 2, par. 0012 and col. 5, par. 0053] includes a replacement mechanism for physically replacing the failed router card [col. 6, par. 0064].

Sarkimen does not explicitly teach:

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- backup router card.

However, Sarkimen does disclose capability of:

- load balancing, redundancy, and fail-over within the network routing and switching system [col. 2, par. 0012 and col. 5, par. 0058].

Therefore, it would have been obvious to an ordinary skill in the art to realize that the Sarkimen's isolating network routing and switching system would have included such backup router card feature in order to providing the network fail-over, load balance, and redundancy capability therein. This is further obvious because the Sarkimen explicitly illustrates the capability of re-directing traffic flow from device to other device in order to achieving the network un-interrupting routing and switching operation [col. 5, par. 0058].

As per claims 7:

Sarkimen further explicitly teaches:

- the failed router card is physically moved into an expanded bay(i.e., expanded network device, redundancy due to failure [col. 5, par. 0058) by the switch fabric [fig. 2, col. 1, par. 0010 and 0012].

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As per claims 8-13:

These claims are similar to claims 1-7. The only minor different is that claim 8 include "the switched fabric includes an information system for receiving a failure message from the primary port facility and a switching system for replacing the failed router card with the backup router card" limitation; however, this limitation is illustrated in dependent claim 4 of independent claim 1. Therefore, these claims are also rejected under the same rationale applied against claims 1-7. **In addition, all of the limitations have been noted in the rejection as per claims 1-7.**

As per claims 14-18:

These claims are similar to claims 1-7. The only minor different is that claim 14 include "a primary port facility having a primary processor and a secondary process" limitation and "the switched fabric includes an information system for receiving a failure message from the primary port facility and a switching system for replacing the failed router card with the backup router card" and limitation; however, these limitations are illustrated in dependent claims 2 and 4. Therefore, these claims are also rejected under the same rationale applied

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against claims 1-7. In addition, all of the limitations have been noted in the rejection as per claims 1-7.

As per claim 19:

Sarkimen further explicitly teaches:

- the replacement mechanism [col. 7, par. 0072] for physically disconnects the failed router card from the primary port facility, move the failed router card to an expanded bay, physically disconnects the unutilized backup router card from the card array, and connects the unutilized card to the primary port facility from which the failed router card was moved [fig. 1, col. 2, par. 0012 and col. 5, par. 0053; col. 5, par. 0057 and 0058]. [col. 7, par. 0072] from the primary port facility [fig. 1, col. 5, par. 0057 and 0058];

In addition, Huang explicitly teaches:

- a switching system for physically replacing [i.e., manual switch] the failed router card with the backup router card in response to the failure message [col. 5-6 , par. 0054].

7. Applicant's arguments with respect to claims 1-19 have been considered but are moot in view of the new ground(s) of rejection.

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Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.


6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dieu-Minh Le whose telephone number is (571) 272-3660. The examiner can normally be reached on Monday - Thursday from 8:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Beausoliel can be reached on (571)272-3645.

The Tech Center 2100 phone number is (571) 272-2100.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


DIEU-MINH THAI LE
PRIMARY EXAMINER
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